

APPENDIX A

Professional Profiles



Dennis Colton, P.G. Principal Hydrogeologist

Technical Specialties:

Investigation and remediation of soil and ground-water contamination. Negotiations with regulatory agencies. Expert testimony/litigation support. Environmental site assessments.

Experience Summary:

19 years of experience: Principal Hydrogeologist at Roux Associates; Principal Scientist at Geraghty & Miller. Successfully directed CERCLA and RCRA investigations, ECRA/ISRA studies, NAPL investigations, expert testimony/litigation support projects and environmental site assessments throughout the United States and Canada.

Credentials:

M.S. Hydrogeology, Adelphi University, 1978

B.S. Geology, University of Maryland, 1972

Certified Professional Geologist, A.I.P.G.

Certified Professional Geologist, Missouri and Pennsylvania

Professional Affiliations:

Association of Ground Water Scientists and Engineers (NWWA)
American Institute of Professional Geologists

Key Projects:

- Directed an RI at a 36-acre state superfund site in Illinois that includes a 22-acre industrial landfill. The project included the successful construction and operation of a pilot treatment plant used to demonstrate that impacted ground water could be treated biologically. This multi-task project was completed 2 months ahead of schedule and 10 percent under budget.
- Served as project director for the completion of the Remedial Design/Remedial Action (RD/RA) phase of work at a CERCLA site in Indiana. Successfully negotiated cost-saving strategies that eliminated several areas of concern thus reducing the areas designated for remediation via a soil vapor extraction system.
- Negotiated a limited scope of work under a 106 Order at a 450-acre CERCLA site in New York. Sampling strategies were negotiated with USEPA to limit the number of samples collected to characterize soil, ground water, surface water and sediment. The agency's acceptance of these strategies limited the total RFI costs and compressed the RI schedule to the satisfaction of all parties.
- Successfully managed the ground-water investigation of an RFI/CMS at a large waste disposal facility in New Jersey saving the client \$500,000 in investigative costs. Reduced the number of SWMUs by combining them into waste management areas. A global ground-water approach eliminated the need for unit specific ground-water investigations.
- Directed the RCRA closure of a chlor-alkali facility at a major chemical manufacturing facility in Illinois. A risk assessment was used to develop an alternative cleanup level for mercury which limited the volume of soil to be remediated. The agency was convinced that only dissolved metals were required to be analyzed for in ground water, and mercury was not detected. Therefore, ground-water remediation was not warranted. This approach saved the client \$350,000.
- Successfully completed an RFI for a 100-acre chemical plant located in Missouri. A ground-water model was constructed which demonstrated that there was only de minimis risk to a nearby river that is used as a potable water supply.
- Coordinated both the investigation of a well field in Massachusetts that had become contaminated and an exploratory drilling program for a new supply well in an adjacent area that was protected from commercial/industrial development. Investigative efforts lead to the identification of the responsible party.
- Conducted an investigation of a contaminated industrial property in Saratoga County, New York that included the installation of an on-site ground-water recovery well and long-term monitoring of off-site private bedrock wells for both ground-water quality and depletion of the available resources.
- Designed an LNAPL recovery system using a slurry wall at a chemical plant in Massachusetts. The system has effectively prevented product from entering the river to the satisfaction of the Massachusetts Department of Environmental Protection (MADEP).
- Designed a DNAPL recovery system above a clay confining unit at a chemical plant located adjacent to the Delaware River. The DNAPL was successfully recovered by taking advantage of the local geologic features at the site.
- Directed investigations at six former manufactured gas plant (MGP) sites in New Jersey. Hot spots are being remediated and biodegradation is being utilized to remediate off-site ground-water impacts.
- Directed a hydrogeologic investigation of soil/ground-water contamination in overburden/bedrock at an ISRA site in New Jersey (dye manufacturing facility). Air sparging was selected to remediate the overburden aquifer which will result in significant cost savings and a reduction in the length of operation. Natural remediation will be used to address BTEX compounds in the bedrock rather than an expensive pump and treat program that was proposed by the previous consultant.
- Provided litigation support to a major pigment manufacturing company alleged to have contaminated a municipal well field. A ground-water model was used to demonstrate that our client could not have impacted the well field.
- Provided litigation support to an aluminum manufacturing company in connection with a private cost recovery litigation case. The aluminum manufacturing company is seeking to recover investigative and remedial costs believed to be covered by its insurance policies. The case is currently active.
- Served as project manager for over 100 environmental site assessments in the United States and Canada. Site investigations have included RCRA and OSHA compliance auditing, as well as subsurface contaminant investigations.
- Conducted a Phase II investigation at a printing facility on Long Island which has resulted in the site being delisted from the New York State Department of Environmental Conservation's (NYSDEC) list of inactive hazardous waste sites.



Professional Profile

Dennis Colton, P.G. Principal Hydrogeologist

EXPERT WITNESS EXPERIENCE

Case	Court	Retained By	Counsel	Expert Report Prepared	Affidavit Prepared	Deposition Provided
FMC v. Numerous Insurance Carriers (1992)	San Francisco, California	FMC	Kevin Wolf, Anderson, Kill, Olick & Oshinsky	No	No	Yes
Hayward Industries v. BASF Corporation (1994)	Newark, New Jersey	BASF Corporation	Arthur Schmauder, Shanley & Fisher	Yes	No	No
Ormet Primary Aluminum v. Employees Insurance of Wausau, et al. (1997)	Monroe County, Ohio	Royal Insurance Company	Robert Edy, Gallagher, Sharp, Fulton & Norman	No	Yes	Yes

List of Articles and Publications Authored by Dennis Colton

None.

Compensation Rate

Mr. Colton's Compensation Rate is \$150 per hour.



William G. Fisher, P.E. Senior Engineer

Technical Specialties:

Evaluation of treatment system and remedial alternatives. Remedial design using technologies including: equalization, filtration, stabilization, pH control, metals removal, air stripping, vapor extraction, sparging, bioremediation, biofiltration and off-gas catalytic oxidation. Water resource and recovery planning and design. Plant design including mechanical, electrical, and instrumentation design. Ground water recovery system, design and implementation. In addition, project responsibilities include: proposals, estimating, presentation and contract efforts.

Experience Summary:

10 years of experience: Senior Engineer at Roux Associates, Senior Project Engineer at ERM; Project Engineer at H2M Group; Staff Engineer at Henderson and Casey, P.C.

Credentials:

B.E., Mechanical Engineering, Pratt Institute
A.A.S., Civil Technology, Delhi University
Professional Engineer: New York

Key Projects:

- Senior Project Engineer for the detailed design of an industrial wastewater pretreatment and sewer design for a facility that generates 40,000 GPD of industrial wastewater from the manufacturing and packaging of cosmetics. The pretreatment system design included two 20,000-gallon double-walled underground storage tanks, automatic control valves and watertight vault, ejector pumps, truck containment and loading area, double-wall fiberglass reinforced plastic piping and control system. The sewer design for the facility included 11,000 feet of sewer under private and public right-of-ways. Responsibilities included: design evaluation, detailed design, piping and instrumentation diagram layout, technical specifications, air emissions evaluation and coordination with the client, and the Suffolk County Department of Health Services. Engineering tasks also included design of systems to be compatible with concentrations of various industrial waste streams at above normal temperatures and interfacing equipment with existing on-line processes and control equipment. Design included complete contract drawings and specifications meeting Suffolk County Sanitary Code, Article 7, County requirements for Toxic/Hazardous Materials Transfer Facility Design Standards and Article 12, County Design Standards. Air-guide-1 modeling was also conducted.
- Project Engineer for the design and construction of a 1,000 gpm municipal potable production water well and force main interconnection. Responsibilities included water quality evaluation, well production evaluation, coordination of temporary treatment services for the existing production well, construction cost estimates, permitting tasks, engineer design report, contract documentation preparation, bid assistance, shop drawing review, construction management and O&M manual preparation. Design responsibilities included: civil, structural and site work design for the force main, well house slab and site access; mechanical design included: equipment layout, building layout, HVAC, piping prelubrication requirements, transmission system, station and well pump design; electrical design included: local well control and control through telecommunications. Permitting tasks included: coordination with the city water department, preparation of an engineer's report, NJDEP submissions, and FAA permits for proximity to an airport. Also provided construction implementation services, oversight, shop drawing review, system performance evaluation and start-up assistance.
- Project Engineer for the design of a 600-foot hydraulic ground-water recovery trench and transfer system. Design tasks included: interceptor trench capture calculations, cross-section design, recovery well and ejector system design, variable speed drive system selection, bubbler level control system selection, cost estimates, soil erosion and control plan, trench and drain piping selection, and deep trench construction profile.
- Project Engineer for various tasks required for the design of a ground-water well and trench recovery system including: design of unique recovery trench system and hydraulic analysis of the system, soil erosion control plan and permit, equipment cost sheets, geotechnical coordination, contract addenda, specifications, trench loop sections and profiles, sewer discharge permit application and potable water service design and permit.
- Evaluated treatment technologies for the final remedy proposed for a New York State CERCLA site in Glen Cove, NY. As senior project engineer, performed the preliminary and final designs and construction management tasks and interfacing with NYSDEC. The work included twelve (12) vapor extraction wells, thirty (30) variable frequency drive water recovery wells to maintain a continuously dewatered area and eighteen (18) passive air inlet wells. Treatment included solids filtration, air stripping, and catalytic oxidation of off-gas. Intermediate liquid stabilization included iron sequestering. Design included systems for dewatering, water treatment using two air strippers, high vacuum vapor extraction and catalytic oxidation treatment, 60 ground water, vapor extraction and passive air inlet wells. Tasks also included: Construction Implementation and pre-award services. Additional tasks included performing a NYS Air Guide maximum potential annual and short term impacts evaluation, system startup and preparation of a comprehensive O & M manual and finalization of a Performance Analysis and Design Modification Plan subsequently approved by the NYSDEC. Construction implementation and oversight responsibilities included, coordinating construction efforts, shop drawing review, conducting bimonthly meetings, NYSDEC primary contact, construction and engineering monthly reports, facility startup, equipment pre-startup checklists and certifications, system and procedural requirements, quality control and troubleshooting efforts.
- Project Engineer for the complete design of a soil remediation system utilizing a vapor extraction system and catalytic oxidizer for destruction of recovered contaminants. Tasks included sizing all equipment, piping layouts, process and instrument diagrams and recovery piping system including special concrete building slab trenches and well handholes which were to be located inside the existing storage building. Provided the vapor extraction header and flow control system design, vapor extraction blower equipment selection and appropriate specifications. Mass balance calculations were also performed to size the catalytic oxidizer, and prepared catalyst specifications and a fuel usage evaluation to determine the size of LPG fuel tanks to be specified.
- Project Engineer for the complete design of a soil remediation system including fifteen vapor recovery wells, recovery lines through a parking lot area, vapor recovery manifold, catalytic oxidizer and HCL quench/scrubber equipment. Work included design calculations for all equipment, piping headloss calculations, mass balance calculation to determine contaminant, HCL, and Nox loadings as well as cooling water requirement and fresh make-up water system design. Provided the equipment layout concrete slab requirements, technical specifications, process and instrumentation diagrams and detailed oxidizer control diagram. Conducted the air discharge calculations and completed the permit application. The system design was submitted to and approved by the Environmental Protection Agency (EPA).

List of Articles and Publications Authored by William G. Fisher

None.

Compensation Rate

Mr. Fisher's Compensation Rate is \$130 per hour.

Prior Testimony Provided by William G. Fisher

None.

Expert's Report

**Berks Landfill
Sinking Spring, Pennsylvania**

Liberty Mutual Insurance Company

v.

The Black & Decker Corporation, et al.

U.S.D.C., D. Mass. C.A. 96-10804-DPW

February 28, 2003

Prepared For

Liberty Mutual Insurance Company

Prepared by:

**Peter Alvey
Principal Engineer
ROUX ASSOCIATES, INC.
2000 Spring Road, Suite 110
Oak Brook, IL 60523**

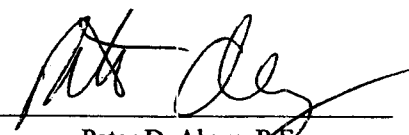

**Peter D. Alvey, P.E.
Principal Engineer**

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1.0 INTRODUCTION

This expert report regarding the Berks Landfill site in Sinking Springs, Pennsylvania was prepared by Peter Alvey, P.E., Principal Engineer of Roux Associates, Inc. The expert report was prepared on behalf of Liberty Mutual Insurance Company for use in the action Liberty Mutual v. Black & Decker.

Opinions reached in this report are based on the following:

- Reports, maps, correspondence and other documents provided by counsel;
- Publicly available reports, maps, aerial photographs and other documents;
- The Expert Report of William Fisher, P.E. of Roux Associates, Inc., dated April 30, 1998, regarding the Berks Landfill site;
- Mr. Alvey's professional experience in engineering and the remediation of contaminated sites.

As part of the upcoming trial, I expect to use various exhibits to assist in presenting my opinions. I am planning to use site maps, aerial photos, excerpts from various documents, sampling data and tables. Some of these exhibits can be found as attachments to Mr. Fischer's 1998 Expert Report, the remainder would be derived from information obtained from documents provided in the litigation as presented in the document lists attached to both this and the previous Expert Report.

Mr. Alvey's professional profile is found in Appendix A. A listing of documents reviewed subsequent to the issuance of Mr. Fisher's 1998 expert report is found in Appendix B. Mr. Alvey's billing rate for this project is \$190 per hour.

2.0 SITE DESCRIPTION

- *The Berks Landfill Site is located in Spring Township, Berks County, Pennsylvania. It is approximately 7 miles southwest of the City of Reading. The site consists of two closed landfills that include a 49-acre eastern landfill and a 19-acre western landfill.*
- Historically, the property was the location of an iron ore mine. From the 1950's to the 1980's, the Berks Landfill operated as a municipal landfill. In 1975, the landfill was granted a permit by the Pennsylvania Department of Environmental Resources (PADER) to discharge leachate from its collection system into an adjacent stream. Also, in 1975, the eastern landfill was granted a solid waste permit to accept municipal refuse and demolition refuse.
- The Berks Landfill was listed on the National Priorities List (NPL) in October 1989.
- In July 1997, USEPA selected a remedy to remediate the site that included: repair of the eastern landfill cap; repair and continued operation of the existing leachate collection system; long-term monitoring of onsite wells, residential wells, a sentinel well, landfill gas, and the aquatic habitat; and institutional controls to prevent future consumption of onsite groundwater and to restrict any future onsite development.
- USEPA gave the Potentially Responsible Parties (PRPs) the opportunity to provide good faith offers to perform the remediation; however, none were received and USEPA ordered the PRPs to perform the work. In accordance with the order, a subgroup of the PRPs developed a remedial design plan that outlined how the landfill cap and leachate collection system would be repaired. USEPA approved the plan in January 2000.
- Construction began in June 2000 and continued until October 2000 with regular oversight from USEPA and the Bureau of Reclamation. During the construction season, the eastern landfill was covered with soil and seeded. On the western landfill, 7,000 feet of inspection trails were laid. The leachate collection lines and manholes were cleaned, inspected, and repaired. The three existing leachate collection ponds were reshaped and relined to accommodate an approximate volume of 1.5 million gallons. The leachate is pumped to the local sewage treatment plant. To monitor site conditions, a sentinel well was installed, as well as nine gas monitoring wells were installed. A total of 300 trees were planted to improve a wetland at the site.
- After construction was completed, USEPA conducted site inspections in October and November 2000, and determined that the remedy was constructed in accordance with the remedial design. Long-term monitoring of the site began in

December 2000 to evaluate onsite and offsite groundwater quality and landfill gas production.

3.0 OPINIONS

Based on a review of the materials discussed in Section 1, Mr. Alvey provides the following opinions. The information provided in the additional documents obtained since the original 1998 expert report supports the opinions provided.

Opinion 1. Environmental activities completed and/or proposed at the Berks Landfill Site, including capping, installation of a leachate collection and interceptor system, and installation, operation and, maintenance of a pumping and treatment system for the on-site lagoons, as well as long-term groundwater, surface water and gas monitoring, are preventative and are not designed to remove or remediate environmental damages.

Bases for Opinion 1.

- A letter from Sinkler & Boyd indicates the elements of a work plan proposed for the Site to include a clay cap and/or topsoil cap and vegetation at an eroded area.
- The Draft Work Plan indicates that as permitted by PADER Permit No. 100347, the footprint of Berks Landfill was to have consisted of a compacted low-permeability subbase liner. Leachate collection within the property boundary was to have been completed, in part, by flow off of the soil subbase liner and, in part, by collection and interception in underdrains. Perimeter interceptor drains downgradient of the eastern landfill were also to have been laid down to capture potential off-site migration of the leachate. The leachate lagoons were initially lined with sprayed asphalt. Recognition of asphalt liner deterioration led to the installation of synthetic membrane liners within the lagoons.
- The Draft Work Plan states that response activities, as specified in the Administrative Order on Consent, were to prepare:
 - “a plan for the construction of an 8-foot high fence of sufficient strength, durability and design to restrict access to the maximum extent practicable by unauthorized person to the 48 acre area addressed by the order;
 - a plan to cap with an adequate volume of uncontaminated clay and/or topsoil and to revegetate the heavily eroded area on the south side of the site...;
 - a plan for the installation, operation, and maintenance of a pumping and treatment system for the on-site lagoons. The pumping and treatment system shall be capable of reliable continued operation for a period of up to

five years and shall be designed and implemented in a manner sufficient to maintain adequate freeboard in the lagoons so that the substances in the lagoons do not overflow during any rainfall events, or due to any other reason...;

- a plan for continued operation and maintenance of the pumping and treatment system until the final remedy is implemented.”

Opinion 1 References:

Golder Associates Inc.; August 1991. Remedial Investigation/Feasibility Study Draft Work Plan, Volume One, Revision #0.

Sinkler & Boyd; August 10, 1990. Letter to USEPA.

Opinion 2. There were no aspects of remediation associated with groundwater cleanup indicated in the documents reviewed.

Bases for Opinion 2.

- The Preliminary Health Assessment states “Recommendations have been made to inform present or future users of water from the previously contaminated residential well of the potential health implications from drinking the water. If data become available suggesting that human exposure to significant levels of hazardous substances is currently occurring or has occurred in the past, ATSDR will reevaluate this site for any indicated follow-up.”
- The Draft Work Plan states “It is notable however that while downgradient private wells do exist, all residences are served by a public water supply which provides a main drinking water source.”

Opinion 2 References:

Golder Associates Inc.; August 1991. Remedial Investigation/Feasibility Study Draft Work Plan, Volume One, Revision #0.

United States Department of Health and Human Services, Agency for Toxic Substances and Disease Registry; August 10, 1990. Preliminary Health Assessment for Berks Landfill.

Opinion 3. The capping, installation of a leachate collection and interceptor system, and installation, operation and maintenance of a pumping and treatment system for the on-site lagoons, as well as long-term groundwater, surface water and

gas monitoring, are considered to be ordinary operational and closure requirements of a landfill owner.

Bases for Opinion 3.

- The Pennsylvania Solid Waste Management Act, Act 241, enacted in August 1968, regulated solid waste storage, collection, transportation, processing and disposal systems and required permits for the operation of processing and disposal systems.
- The 1972 USEPA document titled "Sanitary Landfill Design and Operation" discussed the needs for controlling ground-water pollution and the movement of decomposition gases, fencing, and control of surface water.
- The 1974 USEPA Guidelines on Thermal Processing and Land Disposal of Solid Wastes (40 CFR Part 241) provides recommended procedures for landfill operations. These procedures include that final cover (not less than two feet) be applied on each area as it is completed. It further states that access should be controlled by established roadways only, and records should be kept of qualitative and quantitative impact using leachate and gas sampling and analyses upstream and downstream of the site.
- Pennsylvania Regulations Section 273.322 require submission of a closure plan under 273.192 which requires descriptions of post-closure measures relating to:
 - (i) water control monitoring;
 - (ii) gas control and monitoring;
 - (iii) leachate collection and treatment;
 - (iv) erosion and sedimentation control;
 - (v) revegetation and regrading, including maintenance of the final cover; and
 - (vi) access control.
- In May 1980, the USEPA promulgated Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, Subpart N - Landfills (40 CFR Part 265.300) which provides closure and post-closure requirements. Among these closure requirements are final cover placement, control of ground water, surface water, and air pollution migration as specified in the closure plan. Post-closure care requirements include: maintenance of the function and integrity of the final cover; maintenance and monitoring of the leachate collection, removal, and treatment system, and the gas collection control system; and restricting access to the landfill.

- The Draft Work Plan states that “As permitted by PADER Permit No. 100347, the footprint of Berks Landfill was to have consisted of a compacted low-permeability subbase liner. Leachate collection within the property boundary was to have been accomplished in part, by flow off of the soil subbase liner and in part, by collection and interception in underdrains.”
- The Draft Work Plan states that “The landfill was operated as stated above as a municipal landfill prior to 1970. On January 16, 1970 an application for a permit for ‘Solid Waste Disposal or Processing Facilities’ was filed with the Pennsylvania Department of Environmental Resources (PADER), by Berks Landfill Corporation. PADER issued Permit No. 100347 to the Berks Landfill Corporation on May 27, 1975, along with a ‘Water Quality Management Permit’ (No. 0673203) approving an industrial waste treatment facility.”
- The Administrative Order on Consent states that Permit No. 100347 required “the expansion of the leachate collection system, a detailed groundwater study, installation of monitoring wells to monitor deep groundwater flow quarterly, and annual chemical analyses for each monitoring point.”
- The Administrative Order on Consent states that “On June 29, 1979, a PADER Module 1 permit application (i.e., a request for approval from the state to treat, store, or dispose of a hazardous or residual waste as a result of the Resource, Conservation and Recovery Act of 1976) for disposal of hazardous waste at the Landfill was approved by the PADER as Permit No. 100347.”
- The Draft Work Plan states that “On January 9, 1984, Solid Waste Permit No. 100347 was amended, requiring the installation of additional monitoring wells at the Site, by now called Berks Sanitary Landfill Inc.”
- The Administrative Order on Consent states that “On August 6, 1986, the PADER executed a Consent Order and Agreement (CO&A) with Berks Sanitary Landfill, Inc. and Berks Landfill Corporation requiring them to develop and submit a closure plan for the landfill including a design for a new perimeter leachate collection system for the eastern portion of the landfill and a provision for additional filling to bring the landfill into conformance with PADER regulations regarding slopes, benching, surface water and management, and a schedule for closure no later than October 1, 1986.” (The CO&A also required a ground-water investigation, if necessary, and abatement program and other improvements to the landfill.)
- The Administrative Order on Consent states that “On August 3, 1990, the EPA issued a Unilateral Order to Berks Sanitary Landfill, Inc., This action includes development of a Site Health and Safety Plan, the construction of a fence surrounding the eastern portion of the Landfill, a plan to cap the heavily eroded area on the south side of the Site, and a plan for the installation and operation and maintenance of a pumping and treatment system for the on-site lagoons until the final remedy is implemented.”

Opinion 3 References:

Golder Associates Inc.; August 1991. Remedial Investigation/Feasibility Study Draft Work Plan, Volume One, Revision #0.

United States Environmental Protection Agency; May 1980. Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities.

United States Environmental Protection Agency; June 26, 1991. Administrative Order on Consent for Remedial Investigation/Feasibility Study, Docket No. III-90-32-DC.

Opinion 4. No elements of the Site remediation are associated with off-site cleanup.

Basis for Opinion 4.

- The Administrative Order on Consent states that "On August 3, 1990, the EPA issued a Unilateral Order to Berks Sanitary Landfill, Inc., This action includes development of a Site Health and Safety Plan, the construction of a fence surrounding the eastern portion of the Landfill, a plan to cap the heavily eroded area on the south side of the Site, and a plan for the installation and operation and maintenance of a pumping and treatment system for the on-site lagoons until the final remedy is implemented."

Opinion 4 Reference:

United States Environmental Protection Agency; June 26, 1991. Administrative Order on Consent for Remedial Investigation/Feasibility Study, Docket No. III-90-32-DC.

Opinion 5 Certain costs incurred, or likely to be incurred, at the Berks Landfill site are related to activities which are preventative and are not designed to remove or remediate environmental changes.

Bases for Opinion 5.

- A letter from Sinkler & Boyd indicates the elements of a work plan proposed for the Site to include a clay cap and/or topsoil cap and vegetation at an eroded area.
- The Draft Work Plan indicates that as permitted by PADER Permit No. 100347, the footprint of Berks Landfill was to have consisted of a compacted low-permeability subbase liner. Leachate collection within the property boundary was to have been completed, in part, by flow off of the soil subbase liner and, in

part, by collection and interception in underdrains. Perimeter interceptor drains downgradient of the eastern landfill were also to have been laid down to capture potential off-site migration of the leachate. The leachate lagoons were initially lined with sprayed asphalt. Recognition of asphalt liner deterioration led to the installation of synthetic membrane liners within the lagoons.

- The Draft Work Plan states that response activities, as specified in the Administrative Order on Consent, were to prepare:
 - “a plan for the construction of an 8-foot high fence of sufficient strength, durability and design to restrict access to the maximum extent practicable by unauthorized person to the 48 acre area addressed by the order;
 - a plan to cap with an adequate volume of uncontaminated clay and/or topsoil and to revegetate the heavily eroded area on the south side of the site...;
 - a plan for the installation, operation, and maintenance of a pumping and treatment system for the on-site lagoons. The pumping and treatment system shall be capable of reliable continued operation for a period of up to five years and shall be designed and implemented in a manner sufficient to maintain adequate freeboard in the lagoons so that the substances in the lagoons do not overflow during any rainfall events, or due to any other reason...;
 - a plan for continued operation and maintenance of the pumping and treatment system until the final remedy is implemented.”

References for Opinion 5.

Golder Associates Inc.; August 1991. Remedial Investigation/Feasibility Study Draft Work Plan, Volume One, Revision #0.

Sinkler & Boyd; August 10, 1990. Letter to USEPA.

APPENDIX A

Profile

Peter D. Alvey, P.E.
Principal Engineer/Office Manager

Technical Specialties:

Management and oversight of remediation projects involving soil and ground-water contamination; remediation of chemical, petroleum, asbestos, and PCB contamination at factories, refineries, gas stations, hospitals, and commercial properties; performance of field activities, and selection/oversight of contractors.

Experience Summary:

Sixteen years in environmental assessment, remediation, and risk management; fourteen years in environmental claims investigation and management, including cost containment, liability assessment and settlement negotiations.

Credentials:

B.S. -- Chemical Engineering -- Rose-Hulman Institute of Technology, 1983
Registered Professional Engineer -- Illinois
40-Hour OSHA Hazwoper Training
40-Hour Asbestos Inspector/Project Manager Training

Professional Affiliations:

American Institute of Chemical Engineers (AIChE)
American Society of Testing Materials (ASTM)
Midwest Environment Claims Association (MECA)

Key Projects:

- Consulting expert for insurance carriers in settlement negotiations in claims related to over 300 individual manufactured gas plant sites nationwide, including several dozen in Illinois. Provided expert reports and assisted in settlement negotiations. Provided independent estimates of future costs analysis of potential natural resource damage claims and opinions on the appropriateness of past expenditures.
- Consulting expert for insurance carriers in settlement negotiations relating to over 40 landfills nationwide, approximately 10% of which were in Illinois. Provided expert reports and consultations regarding future remediation costs, timing of releases, quantification of natural resource damage claims and appropriateness of past expenditures.
- Expert witness for insurance carrier defense group in the litigation involving several New Jersey manufacturing facilities. Provided an expert report and deposition testimony regarding allocation of past costs to soil versus groundwater remediation, as well as allocation of remediation costs to first versus third-party claims.
- Expert witness for insurance carrier in litigation related to multiple Superfund sites located in the Midwest U.S. Provided expert report and affidavit regarding allocation of past expenditures to defense versus indemnity costs.
- Provided claims investigation services related to coal tar release to a navigable waterway in Chicago, Illinois. Conducted investigation into cause of release, specifically determining if release was due to an explosion or a mechanical failure. Provided cost containment services related to oversight of remediation activities.
- Provided claims investigation services related to a fire at a tire recycling facility in Illinois. Conducted an on-site investigation related to the cause of the fire, appropriateness of

response activities and allocation of costs to first versus third-party claims.

- Expert witness for insurance carrier defense group in litigation involving several mining facilities. Provided an expert report allocation past expenditures to various categories including: defense, investigation, remediation, closure and unrelated costs.
- Fact witness for insurance carrier in litigation involving a release of trichloroethylene by a tanker truck during a delivery at a manufacturing facility. Provided reports and deposition testimony relating to allocation of extent of contamination to pre-existing versus spill related conditions.
- Assisted insurance claims adjusters in handling of environmental claims in over 200 cases nationwide. Claims involved; UST releases, transportation related releases, heating oil claims and contamination at industrial facilities. Provided assistance in hiring of remediation contractors, investigation of cause and origin and providing opinions regarding timing of releases.

Project Management

- Provided on-site management of decommissioning of steel manufacturing facility in Midwest. Activities included cleansing of PCB contaminated equipment and structural steel, design and operation of wastewater treatment system for remediation generated wastewaters and oversight of asbestos abatement activities.
- Provided on-site project management for decommissioning and demolition of manufacturing facility in the Midwest. Activities included removal of hazardous materials, UST removal, transformer removal, and asbestos abatement.
- Provided project management for UST program for mechanic contractor facilities nationwide. Responsibilities included hiring of tank removal contractors, negotiations with regulatory agencies and reimbursement from state UST funds.
- Completed PRP allocation project at Superfund site in Midwest for USEPA. Activities included review of waste-in documents including loading tickets and invoices. Determined PRP allocations based upon waste-in volume and toxicity of materials received.
- Performed environmental assessments of commercial and industrial facilities across the country in support of property transfers or mergers of companies.
- Conducted on-site investigations of over 200 industrial and waste management facilities nationwide in support of environmental liability insurance applications. Provided opinions related to the environmental risks posed by the facilities and prepared recommendations to reduce the potential liabilities.
- Project Manager for investigation and management of environmental insurance claims, including cost containment, liability assessment, and settlement negotiations. Investigation and remediation of chemical and petroleum contamination of soils and ground water.
- Environmental Manager of a team of professionals in environmental claims investigations, liability assessments, and remediation projects. Specific projects included refinery

Peter D. Alvey, P.E.

Principal Engineer/Office Manager

waste remediation, underground storage tank removal, Phase I and II real estate assessment, and liability assessments of industrial facilities.

- Chemical Engineer responsible for field activities relating to remediation of soil, ground water, and asbestos contamination of industrial facilities. Specific projects included decommissioning/decontamination of industrial facilities, SPCC (spill prevention control and contingency) plan preparation, and design/implementation of site investigations.
- Chemical Engineer responsible for chemical and material analysis for metal finishing industry clients. Specific projects included waste minimization studies, waste water treatment design, process control, and corrosion studies.
- Piping Engineer working at nuclear power plants in Illinois and Indiana as a piping and pipe support as-built engineer. Responsible for survey and redesign of pipe systems and pipe supports for both nuclear and non-nuclear related piping.

Expert Witness Testimony (last four years):

- Curtiss-Wright Corporation V. Aetna (1998)
Superior Court of New Jersey (Bergen County)
Expert Report and Deposition, settled prior to trial
- Central Maine Power v. Earnest A Moore (1999)
Superior Court of Maine (Augusta)
Expert Report and Deposition, settled prior to trial
- Consumers Energy Company v. Certain Underwriters at Lloyd's London, et al (2000)
U.S. District Court Eastern District of Michigan
Expert Report and Deposition, testimony at binding arbitration
- Crucible Materials Corporation v. Aetna (2000)
Federal Court (Northern District of New York)
Expert Report, Deposition
- Jostens, Inc. v. Federated Mutual Insurance Co., et al. (2001)
Ramsey County (MN) District Court
Expert Report, Deposition, settled prior to trial